REMARKS/ARGUMENTS

The original drawings are objected to under 37 CFR 1.83(a). The Examiner states that the claims "off-set" angle is not shown. The off-set angle is a standard angle that is well known in the related arts. Qualified engineers and machinists are well aware that the off-set angle between any two referenced items (flutes in this specific case) is the rotational shift angle of the second item from to the first item. FIG. 4 in the drawings clearly shows this rotational shift angle or off-set(as item number 86 in the submitted Replacement Sheet). The specification clearly states that this off-set exists between paired-flutes (see paragraphs 28 and 37). For clarity, an amended FIG. 4 has been submitted that specifically shows the off-set angle that is described in the specification. Additionally, the off-set angle described in the specification has been labeled as "86" and included in amended FIG. 4. The rejection of Claim 14 under 35 USC 112, second paragraph should now be overcome by these amendments. No new matter has been added since the off-set angle is described in the specification, plainly shown in the originally submitted drawing (though not originally numbered), and those skilled in the relevant arts are well aware to what the "off-set" notation refers.

Claims 1-6 and 9-11 have been rejected under 35 USC 102(e) as being anticipated by Risen (U.S. Patent No. 6,652,203). The Examiner contends that the described invention in Risen contains all the elements claimed for the subject invention. It is respectfully submitted that the Examiner has failed to appreciate the dramatic differences between the Risen device and the subject invention. It is important to stress that the invention described in Risen is a "drill bit" and NOT a "rotary cutting tool or end mill" as the subject invention is described in paragraph [005]. The "drill bit" of Risen is

intended for ONLY creating penetrating holes in materials and not for lateral cutting, as with the subject invention. Significantly different cutting problems exist with lateral cutting end mills, the subject invention, than with simple in-and-out "drilling bits." The "drill bit" in Risen is merely created to enter a material and then exit. The Examiner notes that the flutes on the Risen "drill bit" have variable helical-pitches, however the helical-pitch variation in Risen is ONLY to allow the fragmented material being drilled to quickly pass out of the hole and onto the surface of the drilled material so the "drill bit" does not get stuck within the drilled hole or create too much heat from chips that are not quickly removed. THE CRITICAL INFORMATION TO APPRECIATE ABOUT THE RISEN "DRILL BIT" IS THAT EACH AND EVERY ONE OF THE FLUTES HAS EXACTLY THE SAME CHANGE IN HELICAL-PITCH FROM THE TIP TO THE SHANK, WHICH HELPS TO REMOVE THE WASTE PRODUCT AS QUICKLY AS POSSIBLE OUT OF THE STRAIGHT-IN DRILLED HOLE. THE SUBJECT INVENTION HAS EVERY OTHER FLUTE FORMED WITH THE OPPOSITE OR INVERSE HELICAL-PITCH TO ELIMINATE VIBRATIONAL-INDUCED MILLING DAMAGE TO THE MILLED PIECE. THE SUBJECT INVENTION, WITH ALTERNATING/INVERSED HELICAL-PITCHES FOR EACH FLUTE, WOULD NOT FUNCTION AS A "DRILL BIT" DESIGNED TO REMOVE WASTE IN AN EFFICIENT MANNER (THE ALTERNATING HELICAL-PITCHES WOULD CANCEL EACH OTHER OUT FOR WASTE REMOVAL) NOR WOULD THE RISEN "DRILL BIT" FUNCTION TO ELIMINATE VIBRATIONAL-INCUCED DAMAGE SINCE EVERY FLUTE HAS THE SAME HELICAL-PITCH VARIATION. The pending independent claims (Claims 4 and 9) have been amended with the phrase "wherein each said flute has said helical pitch gradual transition running

opposite to a previous or subsequent flute" to better present the **alternating** flutes inversed helical-pitch requirement for the subject invention. Claims 1-3 have been withdrawn since no reference to multiple flutes was included.

Claims 4, 7-9, 12, and 13 stand rejected under 35 USC 103(a) as being unpatentable over Paige (U.S. Patent No. 4,810,136), in view of Risen ('203). The Paige invention discloses a cutting tool that has a **constant** helical-pitch for each and every flute. A second set of cutting edges are generated in each flute by including a **constant** helical-pitch channel that runs in the opposite direction and extend to the tip area. The Paige flutes do NOT have reversed variable helical-pitches as found in the subject invention. There are simply two independent helical cutting regions, one for the formation of each flute and one running in a constant and opposite direction for the second set of cutting edges. The second set of off-set cutting edges are merely present to break-up cut chips of the milled material and not to quell vibrational problems. The subject claims, as amended, are not suggested, taught, or implied by the Paige/Risen patents, either individually or in combination. The physical structure, physical use, and physical purpose of the subject cutting tool is completely different from the Paige/Risen individual/combined devices.

New Claim 15 has been added to better frame the novel invention into a single independent claim.

In view of the above remarks and arguments, the Examiner is respectfully requested to withdraw the rejections to the Claims and pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution

of the subject application, the Examiner is invited to call the undersigned attorney at (916) 498-1010.

Respectfully submitted,

Date: October 11, 2005

By: _____

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